

whole of the chromatin of the nucleus has become distributed in the plasma. I have acquired a continuous series of developmental stages right up to the complete dispersion of the chromatin. Later on one finds the cavity of the skeleton filled with numerous multinucleate globules. It is evident that the process leads to the formation of swarm-spores.

Again, other individuals are sometimes met with in which in place of the nucleus there is found a vesicle with a considerably thickened wall that takes a deep stain with hæmatoxylin or carmine. This wall is clothed on the inside with a coat of protoplasm. The most striking feature in these stages consists, however, in the presence of many larger and smaller globules, which, on being treated with osmium or mixtures containing osmium, become black, and seem to consist essentially of fat. They lie arranged in a hollow cup ("Kugelschale") against the inner wall. In other cases we meet with similar structures outside the nucleus in the endoplasm. Sometimes there are only one or two such vesicles, at other times a larger number, even amounting to as many as twelve or more. On their appearance the nucleus undergoes certain changes—indeed, it may even entirely cease to exist as such; in the endoplasm, too, degenerative phenomena take place.

Since it was no part of my plan, in framing the foregoing remarks, to propound far-reaching conclusions and comparisons, I have confined myself to putting together in simple form the most essential observations. In so doing I have touched very briefly even upon the most important points. My detailed paper, which will appear shortly, contains all further particulars.

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#### BIBLIOGRAPHICAL NOTICE.

*The Collector's Manual of British Land and Freshwater Shells.* By LIONEL ERNEST ADAMS, B.A. Second Edition. 8vo. Leeds, 1896.

A NEW edition of this work will probably be welcomed by many collectors of British land and freshwater shells, as it contains instructions with regard to collecting, the means to be employed, the localities to be searched, the methods of preparing specimens for the cabinet, and remarks upon labelling, mounting, and arrangement of collections, which may be useful to them. By the more scientific student, however, the book will be less appreciated, as some portions of the classification adopted are very archaic, and mistakes have crept in, so that a want of thoroughness seems to pervade the

volume. The classification followed is that which appeared in 'The Conchological Society's List of British Land and Freshwater Mollusca, 1892.'

The author in the preface observes that "it is to be regretted that, of necessity, many of the old familiar names—almost household words that call up so many associations—have to give way to others by the inexorable law of priority; but it is to be hoped that the present system of nomenclature is now fairly crystallized." If our author admits the law of priority, he need scarcely regret altering "old familiar names"; but, if he really imagines that the nomenclature he has employed is at all final, we are afraid that his mind will soon be disabused of so vain a hope. For example, we would point out that (1) the genus *Neritina* (p. 13) belongs to the Scutibranchiata, and not to the Pectinibranchiata; (2) that *Cyclostoma* (why not *Pomatias* if priority is to be observed?) is not classified with the Pulmonata; (3) that the terms (p. 147) Acephala, Pelecypoda, and Lamellibranchiata, respectively termed class, subclass, and order, are practically synonymous. On p. 19 the Pulmonata is regarded as a *suborder* of Inoperculata, which is termed an *order* of Gastropoda (!), whereas on p. 137 it is placed as a *suborder* of Operculata. Mr. Adams, whilst adopting the genus *Vivipara* (Montfort used the masculine form *Viviparus*) instead of *Paludina* of Lamarek, has still retained the family name Paludinidæ, a course which is not permissible. The generic nomenclature also needs much revision. *Vitrina* scarcely requires a family Vitrinidæ, but might have been left in Limacidæ. *Hyalinia* of Agassiz is not synonymous with *Zonites* of De Montfort, and is posterior to *Vitrea* of Fitzinger. The "Helices" are arranged in thirteen subgenera, some of which, e. g. *Patula*, *Punctum*, *Acanthinula*, and *Vallonia*, are now regarded as distinct genera, and others fall under the genus *Helicella*; *Chilotrema* is synonymous with *Helicigona*, Férussac, *Goniostoma* (preoccupied) with *Helicodonta*, and *Turricula*, Beck (also preoccupied) with *Trochulus* of Schlüter. With regard to specific names\*, we would point out that, whilst adopting *Helix itala*, Linn., in place of *H. evictorum*, Müller, it is remarkable that the *Helix barbara*, Linn. (synonymous with *H. acuta*, Müll., *vide* Hanley, Westerlund, and Pilsbry), is wholly disregarded. Mr. Adams, like most British conchologists, makes very free use of varietal names, a course which has on several occasions been severely deprecated. For our own part, however, we consider that, within certain limits, the use of varietal names is undoubtedly convenient, and it is the abuse and not the use of the system which has led to censure. In the descriptions, which are mostly very brief, the surface-sculpture is very often totally disregarded. For instance, the peculiar wrinkling of *Helix aspersa* and the spiral striæ of *H. arbustorum* and the oblique lines of growth in many are not referred to. The glossary (pp. 164–181) will be useful to young students; but it is

\* *Helix cantianiformis*, Ancy, from Folkestone (Bull. Soc. malac. France, 1884, p. 158), is not referred to.

unfortunate that some of the definitions are either inadequate or misleading, e. g., "*Gastropoda*, a class of univalve mollusks, the lower surface of whose belly forms the foot." Many Gastropods have no shells, and in some the foot (*Vermetus*, *Xenophora*, *Strombus*, &c.) cannot be said to form the lower surface of their belly. Genus is termed "a subdivision of an Order." This should be family. The explanations given of mantle, Pulmonobranchiata, scar, sinuate, suture, synonym, valve, &c. are extremely crude. A synonym is said to be "a name that has the same meaning as another name"; the suture is "the furrow between the whorls of a univalve"; muscular scars are described as "depressions formed by the attachment of the muscles holding the parts of a bivalve together."

In the index we notice that synonyms are omitted. This, in cases of such old "familiar names" as *Paludina*, *Helix ericetorum*, *Hyalinia Draparnaldi*, *H. glabra*, and *Pupa umbilicata*, is to be regretted.

In conclusion, whilst pointing out certain inaccuracies which mar the work, we do not altogether deny its utility, for, being written by an experienced field-naturalist, it contains much information that will be useful to the collector. The nine original plates are reproduced with slight alterations, and to them have been added two others devoted to slugs and *Pisidia*.

## MISCELLANEOUS.

### *Lysactinic*, not *Lissactinic*.

To the Editors of the '*Annals and Magazine of Natural History*.'

GENTLEMEN,—Dr. Gregory has called my attention to a serious and misleading error on p. 14 of my 'Catalogue of British Echinoderms.' In line 12 there occurs in brackets the word *lissactinic*; as is clear from the corresponding word *desmactinic*, five lines lower, I meant to express in one word that condition of Echinoderm organization in which the rays are free from the "calycinal plates." Of course I ought to have written *lysactinic*.

I am totally at a loss to explain how I came to make such an egregious blunder, for it would be both an affectation and an untruth to appeal to the Johnsonian excuse of "sheer ignorance, madam," while the Horatian explanation of Homer's occasional sleepiness is altogether inapplicable: no schoolboy—I do not mean Lord Macaulay's prodigy—in the hottest, sleepest afternoon of all the summer half would ever be caught napping like this. I remember, however, that in the later part of the year 1891 I had my first attack of influenza, and the error was, perhaps, a sequela of that mysterious and enervating affliction.

F. JEFFREY BELL.